

# THE IMPACT OF CAPITAL ADEQUACY RATIO UNDER BASEL II ON THE DETERMINANTS OF PROFITABILITY RATIOS OF PUNJAB NATIONAL BANK

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## ABSTRACT

*Risks to a bank are responsible for an adverse impact on the capital and profitability. The profitability ratios play an important role in deciding the strength of a bank over the years. The present study has been carried out to observe the impact of capital adequacy ratio on the profitability ratios of Punjab National Bank during the implementation period of Basel II. The relationship between the Capital adequacy ratio and profitability ratios has also been explained in the present study. The profitability ratios like Dividend Payout Ratio, Return on Equity have shown decreasing trend during the Basel II period whereas ratios like Return on Capital Employed, Return on asset, Earning per Share and Dividend Payout Ratio have not shown consistent decrease.*

*The correlation and regression analysis show positive relationship between all the profitability ratios and Capital Adequacy ratio except earnings per share.*

**Key words:** ROSF (Return on Shareholder's Fund, ROA (Return on Assets), DRP (Dividend Payout Ratio), DPS (Dividend per Share), ROCE (Return on Capital Employed), ROE (Return on Equity), EPS (Earnings per share) and CAR (Capital Adequacy Ratio).

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## 1. INTRODUCTION

Since 1960s, the Indian banking industry has become an important tool to facilitate the development of the Indian economy. The banking sector in India has undergone through several reforms like nationalisation and adoption of Narshimhan committee guidelines at par with international standards in nineties which had been the start of economic reforms in India. The banking sector has shown enormous responsiveness to the requirements of the planned economy like India. Maji and Dey, (2006) found how strongly the process of globalisation and liberalization has influenced the Indian Banking sector.

In view of financial turmoil and other disruptions in the international financial markets, the governors of G10 countries established a committee on Banking Regulations and supervisory practices at the end of 1974. Later renamed the Basel committee on Banking supervision, the committee was designed as a forum for regular cooperation between its member countries on banking supervisory matters and to enhance financial stability. The 1988 accord, commonly known as Basel I, called for a minimum capital ratio of capital to risk – weighted assets of 8% to be implemented by the end of 1992. The committee also refined the framework to address risks other than credit risk which was the focus of 1988 accord. In January 1996, the committee issued market risk amendment to capital accord. The new accord introduces and thoroughly examines a type of risk which although well documented in the manufacturing sector, had been somewhat overlooked by banking sector until recently, i.e. operational risk, incorporated by the new accord on capital adequacy proposal (hereafter Basel II).

In June 2004, the committee issued revised capital framework generally known as Basel II, which comprised of three pillars:

- **Pillar 1:** Minimum capital requirement as set out in 1988 accord.
- **Pillar 2:** Supervisory review of an institution's capital adequacy and internal assessment process.
- **Pillar 3:** Effective uses of disclosure as a means to strengthen market discipline encourage sound banking practices.

Under Pillar I of Basel II, a regulated institution must calculate the 'minimum capital' required to cover losses for each of its Credit, Market and Operational risks and then add them together to arrive at an overall Minimum Capital requirement.

Risk to a bank may arise due to expected and unexpected events which are responsible for an adverse impact on the bank's capital and profitability. Today's, the zero risk business does not exist and risk has always existed in business. As to banking it is a risky business and the banks assume various kinds of risks in the process of providing financial services. Hassan (2001) studied the performance of Islamic banks worldwide during 1994-2001. A number of internal and external banking factors were used to predict profitability and the result remarked high capital lead to high profitability. Abreu (2002) found that well capitalized banks face lower expected bankruptcy costs and thus low cost of funding resulting in better profitability. Capital is essential and an important factor to the perpetual continuity of a bank. A minimum amount of capital is required to ensure safety and soundness of the bank and therefore the trust and confidence of the customers. Athanasoglou et al. (2005) opined that a bank with sound capital position can pursue the business transactions more effectively and efficiency to counter the unexpected losses and ensure the required profits.

## 2. REVIEW OF LITERATURE

Ijeoma, Ngoziblessing (2015) found that bank reforms had significant influence on profit of Zenith bank PLC before reform and after reform while studying "Impact of bank reform on the capital adequacy and profitability of Nigerian banks."

**Ndifon Ojong Ejoh and Ubana Ubi Iwara (2014)** in their work “The impact of Capital Adequacy on Deposit money banks’ profitability in Nigeria” revealed that capital adequacy plays an important role in explaining banks’ Return on Assets (ROA) which is a measure of banks’ profitability.

**Asikhia Olalekan & Sokefun Adeyinka (2013)** in their research on “Capital Adequacy and Banks’ profitability: An Empirical Evidence from Nigeria” found that the secondary data analysis showed a positive and significant relationship between capital adequacy and profitability of banks.

**A.A Onadapo and Adebayo, E. Olufemi (2012)** studied the effect of capital adequacy on the profitability of the Nigerian banking sector. They found that performance indicators Return on Assets, Return on capital employed and efficiency ratio among others do not reflect much on Capital adequacy ratio of the Nigerian Banking sector.

**Khalid Ashraf Chishty (2011)** in his study on “ The impact of capital adequacy requirements on profitability of private banks in India ( A case study of J and K Bank, ICICI bank, HDFC bank and Yes bank) found that there was no significant impact of capital adequacy, non-interest income and net interest income on profitability of the private commercial banks. Various financial ratios employed along with regression suggest that null hypothesis stands committed. The study further finds out that the non- risk weighted capital adequacy measures (i.e. equity capital ratio) is negatively related with the profitability of a bank.

**Gilibert, Wheelock and Mostafa (2007)** referred Capital which consists of equity and long term debts and considered a source of funds to the banks along with deposits and borrowings. In measuring the profitability of a bank, the regulators have used Return on Assets (ROA) and Return on equity (ROE) to access the performance of the bank. These two are used as inputs in statistical models to find out the bank’s failures and mergers and other purposes which need measuring profitability.

### Objectives of the study

1. To find out the impact of capital adequacy norms on the profitability parameters of Punjab National Bank for the years 2009-2014 (Period of Basel II).
2. The study also establishes the relationship between the capital adequacy ratio and profitability ratios of the bank for the period under study.

### Scope of the Study

The study has been carried out on Punjab National bank. PNB is having second largest network next to SBI in public sector banks. It’s having lesser branch expansion abroad its area of operation is largely based in India. Dr. Manvinder et. All (2014) found that PNB has the highest return on net worth mean which indicates that management of PNB is at using leverage to increase profit and profit margins. It is also a sign of good management. Thus PNB can be taken as a representative bank for this study to find out the relationship of profitability ratios and capital adequacy ratio during the implementation period of Basel II.

**Data source:** The data has been collected from “Statistical tables relating to banks in India” and “Report on Trend and progress of banking in India” published by reserve bank of India and money control. Com.

**Research Methodology:** The present study is based on previous studies that addressed the research topic to explain the theoretical aspects along with using the annual reports of Punjab National bank for the applied part of this study. The other approach is based on the statistical analysis for which secondary data have been collected on the study subject for the period 2009-2014, focussing the impact of Basel II norms.

The study focuses on the following statistics:

1. Pearson Correlation Coefficient to find out the directions of the expected relationship between independent and dependent variable (capital adequacy ratio).
2. Multiple linear regression analysis to determine the degree of impact of capital adequacy ratio requirements on profitability ratios of Punjab national bank.

The profitability ratios are taken as independent variables and capital adequacy ratio is taken as dependent variable and vice versa.

### Description of variables

A bank can earn profit to survive and grow over a long period of times. The following profitability ratios are calculated to measure the operating efficiency of the bank.

### Earnings per Share (EPS)

The profitability of shareholders' investment can be measured in many other ways. One such measure is to calculate the earnings per share (EPS) is calculated by dividing the profit after taxes by the total number of ordinary shares outstanding.

$$\text{EPS} = \frac{\text{Profit after tax}}{\text{Number of shares outstanding}}$$

### Dividends per share (DPS)

The net profits after taxes belong to shareholders. But the income, which they really receive, is the amount of earnings distributed as cash dividends. Therefore, a large number of present and potential investors may be interested in DPS rather than EPS.

DPS is the earnings distributed to ordinary shareholders divided by the number of ordinary shares outstanding.

$$\text{DPS} = \frac{\text{Earnings paid to shareholders (dividends)}}{\text{Number of ordinary shares outstanding}}$$

### Dividend- Payout Ratio

The dividend- payout ratio or simply payout ratio is DPS (or total equity dividends) divided by the EPS (or profit after tax).

$$\text{Payout ratio} = \frac{\text{Equity dividends}}{\text{Profit after tax}}$$

$$\text{Payout ratio} = \frac{\text{Dividends per share}}{\text{Earnings per share}} = \frac{\text{DPS}}{\text{EPS}}$$

## RETURN ON EQUITY

The shareholders' equity or net worth will include paid up share capital, share premium and reserves and surplus less accumulated losses. Net worth can also be found by subtracting total liabilities from total assets. The return on equity is net profit after taxes divided by shareholders' equity which is given by net worth.

$$\text{ROE} = \frac{\text{Profit after taxes}}{\text{Net worth (Equity)}}$$

## Return on Shareholder's Fund

This ratio is used to interpret how efficiently the shareholders' funds is used to maximise the net Profit. If the return on net worth is higher than the bank's return on assets, it may be a sign that

Management is using leverage to increase profits and profit margins. Thus it is the ratio of net

Profit to total shareholders' fund.

$$\text{Return on shareholders' fund} = \frac{\text{Net profit after tax and interest}}{\text{Total shareholders' fund}}$$

## Return on Capital Employed (ROCE)

It is a measure to find out the performance of banks in terms of profit from its capital Employed. The performance of banks over the years can be compared by using profit generation from the capital of the bank.

$$\text{ROCE} = \frac{\text{Profit before interest, tax and dividends}}{\text{Capital employed}} \times 100$$

## RETURN ON ASSETS

The conventional approach of calculating return on asset is to divide Profit after tax (PAT) by total assets. Assets represent pool of funds supplied by shareholders and lenders. It is therefore more appropriate to use following measure of ROA for computing the operating efficiency of banks.

$$\text{ROA} = \frac{\text{EBIT}}{\text{Total Assets}}$$

## Capital Adequacy Ratio

It is an important aspect of a bank to maintain the depositors' confidence and also indicates ability of management to with stands against unexpected losses.

$$\text{CAR} = \frac{\text{Tier 1 capital + Tier 2 Capital}}{\text{Risk weighted assets}}$$

CAR is arrived at by taking into account the ratio between Capital to risk weighted Assets. CAR covers credit, market and operational risk.

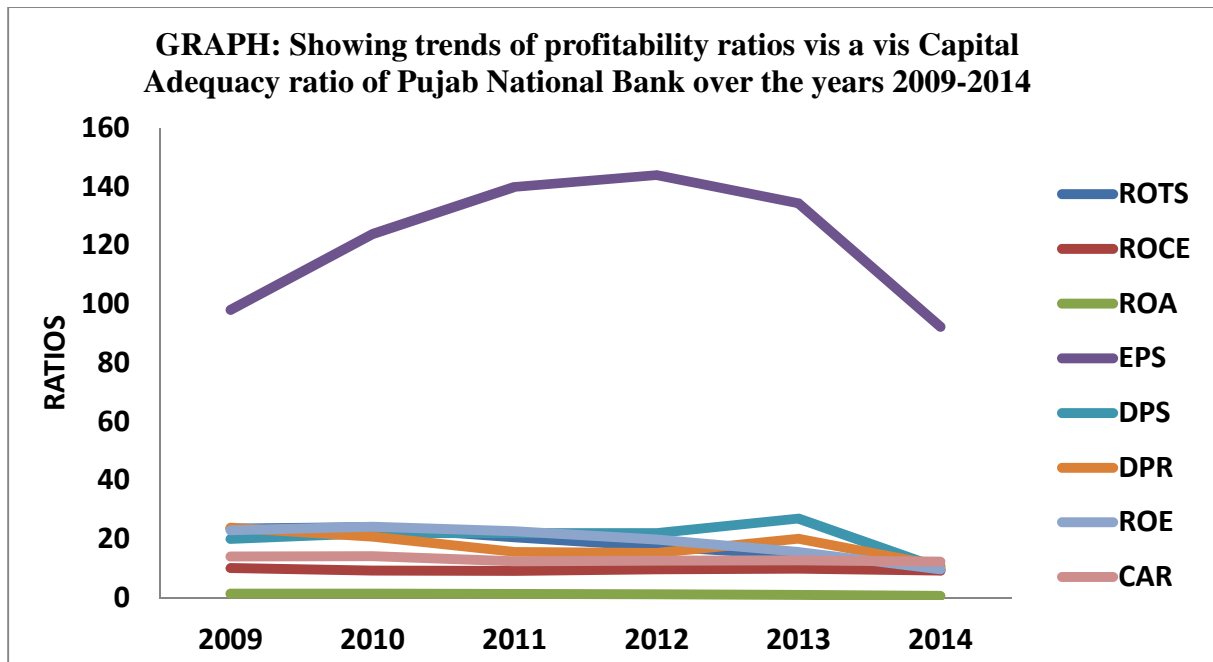
**Table 1** Profitability and Capital adequacy ratios of Punjab National Bank

	YEAR		2009	2010	2011	2012	2013	2014
<b>Return on Total Shareholder's Fund</b>			23.52	24.06	20.61	17.55	14.52	9.31
<b>Return on Capital Employed</b>			10.14	9.24	9.09	9.71	9.86	9.29
<b>Return on Assets (ROA)</b>			1.39	1.44	1.31	1.17	1.01	0.65
<b>Earnings per Share</b>			98.03	123.86	139.94	144	134.31	92.32
<b>Dividends per share</b>			20	22	22	22	27	10
<b>Dividend Payout ratio</b>			23.86	20.74	15.72	15.27	20.1	10.83
<b>Return on equity (ROE)</b>			22.92	24.12	22.6	19.8	15.7	9.69
<b>Capital adequacy Ratio</b>			14.03	14.16	12.42	12.63	12.72	12.29

From the above we find that almost all profitability ratios have decreased over the period during the Basel II. A decrease in Return on total shareholders fund shows that the bank is not generating sufficient net profit. ROCE is showing declining trend from 2009 to 2011 and thereafter it increases but decreases in the year 2014. ROA has increased in 2010 and thereafter decreases which indicates decrease in net profit of the bank in subsequent years due to increase in provisions and contingencies.

Earnings per share depend on net profit and number of shares outstanding at the end of financial year. This ratio is also linked with capital market situations which are responsible for sale and purchase of shares. The trend showing an increase till 2012 and thereafter decreases in subsequent years till 2014.

Dividend per share remains almost same except in 2013 when it witnessed a rise and then there was a sharp decline in the year 2014. Dividend Payout Ratio shows a decrease till 2012, thereafter it increases in 2013 and then there is a sharp decline. Return on Equity (ROE) increases in 2010. This is because there has been an increase in Net Profit of PNB. Thereafter the net profit of bank declined resulting in decrease in ROE in subsequent years. CAR shows a minor increase in the year 2010 but later it decreased unevenly.



The graph of Earnings per Share shows much variation during the period of study but it reaches to almost same position in 2014 as it was in the year 2009. Dividends per Share remains constant throughout the years. Though there is a sharp increase in 2012 and thereafter it declines in 2014. The other parameters like ROCE, ROA, DPR and ROE have remained almost same. CAR remained almost same in 2009 and 2010 and it has decreased in the subsequent years.

### 3. DATA ANALYSIS AND INTERPRETATION

#### 1. Analysis of determinants of CRAR

The study will be carried out to find the relationship between the CRAR and the some important profitability Ratios. The analysis of these determinants will give an idea about the relationship that CRAR Share with them. We will observe whether the profitability ratios during the Basel II period of PNB have an impact on CRAR of the bank.

##### 1.1. CAR and Return on total Shareholder's Fund

###### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781 <sup>a</sup>	.611	.513	.57963

Predictors: (Constant), Return on Total Share holder's Fund

**Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.955	.866		12.649	.000
ROTSF	.114	.046	.781	2.505	.066

Dependent Variable: CRAR

The positive value of R shows that there exists a positive correlation between Return on Total Share Holder's fund and capital adequacy ratio. The value of R square at .611 depicts that 61.1% of change in CAR is defined by Return on Total Share Holder's Fund. We can say that change in one percentage in Return on Total Share Holder's Fund can change The CAR by 61.1 percent. This is a considerable impact by the variable on the dependent variable of CRAR.

**1.2. CAR and Return on Capital Employed****Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.323 <sup>a</sup>	.105	-.119	.87905

a. Predictors: (Constant), **Return on Capital Employed**

**Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	6.797	9.145		.743	.499
ROCE	.654	.956	.323	.683	.532

Dependent Variable: CRAR

There is a positive relationship between Return on Capital Employed and the Capital Adequacy Ratio. The R square at .105 shows that only 10.50 percent of change in CAR is defined by the Return on Capital Employed. In other words change in one percentage in Return on Capital Employed ratio will change the CAR by 10.5 percent.



### 1.3. CAR and Return on Assets (ROA)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.713 <sup>a</sup>	.508	.385	.65174

Predictors: (Constant), Return on Assets

#### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.714	1.176		9.107	.001
	ROA	2.004	.986	.713	2.031	.112

Dependent Variable: CRAR

There is a positive relationship between Return on Assets (ROA) and CRAR. The R square at .508 shows that only 50.8 percent of change in CAR is defined by the Return on Assets. In other words change in one percentage in Return on Asset ratio will change the CAR by 50.8 percent. This is a significant result and shows that this variable is a significant one.

### 1.4. CAR and Earnings per Share

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.257 <sup>a</sup>	.066	-.167	.89776

#### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.227	2.259		6.297	.003
	EPS	-.010	.018	-.257	-.532	.623

Dependent Variable: CRAR

There is a negative relationship between Earning per share and CRAR. The R square at .066 shows that only 6.6 percent of change in CAR is defined by Earning per Share. In other words change in one percentage in Earning per Share ratio will change the CAR by 6.6 percentages. This shows that there is lack of considerable impact by the variable on the dependent variable CRAR.

## 1.5. CAR and Dividends per share

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.232 <sup>a</sup>	.054	-.183	.90370

Predictors: (Constant), Dividends per share

### Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	12.343	1.513		8.160	.001
DPS	.034	.072	.232	.476	.659

Dependent Variable: CRAR

Dividends per share and CAR has positive ratio. The R square at .054 shows that only 5.4 of change in CRAR is defined by Dividends per share. This means there is insignificant result and shows that this variable is an insignificant one.

## 1.6. CAR and Dividend Payout Ratio

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.827 <sup>a</sup>	.684	.605	.52229

a. Predictors: (Constant), Dividend Payout Ratio

### Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.440	.910		11.478	.000
DPR	.147	.050	.827	2.942	.042

Dependent Variable: CRAR

There is a positive relationship between Dividend Payout Ratio and CRAR. The R square at .684 shows that only 68.4 percent of change in CAR is defined by DPR. In other words change in one percentage in Dividend Payout Ratio will change the CAR by 68.4percent.

### 1.7. CAR and Return on Equity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658 <sup>a</sup>	.432	.290	.69992

a. Predictors: (Constant), Return on Equity

Model	Unstandardized Coefficients		Standardized Coefficients	t
	B	Std. Error	Beta	
1(Constant)	11.149	1.121		9.943
Return on Equity	.099	.057	.658	1.745

Dependent Variable: CRAR

There is a positive relationship between Return on Equity (ROE) and CRAR. The R square at .432 shows that only 43.2 percent of change in CAR is defined by Return on Equity. In other words change in one percentage in Return on Equity will change the CAR by 43.2 percent.

## 2. Impact of CRAR on the profitability ratios of Punjab National Bank

In the last section we have analyzed the relationship between profitability ratios and CRAR keeping former as independent and the later as dependent variable. In this section the CRAR is kept as an independent variable taking all others as dependent variable.

### 2.1. Return on total Shareholder's Fund and CRAR

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.781 <sup>a</sup>	.611	.513	3.96375	.611	6.274	1	4	.066

a. Predictors: (Constant), CRAR

b. Dependent variable: TSF

#### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-51.433	27.870		-1.845	.139	-128.813	25.948
	CRAR	5.344	2.133	.781	2.505	.066	-.579	11.267

Dependent Variable: Total Shareholders Fund

The correlation between the variables of CRAR and Total Shareholders fund is strong positive correlation with a value of .781 as shown by the value of R. The value of R square is .611 which means that 61.1 percentage of variation in the value of dependent variable is explained by the independent variable. This means that impact of Total Shareholders Fund on CRAR is more significant than other factors. The level of significance is well above the value of .005 as the test is performed in the 95% confidence level. This means that the null hypothesis of having no relationship between variables is rejected thereby showing significant between the variables considered.

## 2.2. Return on Capital Employed and CRAR

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.323 <sup>a</sup>	.105	-.119	.43491	.105	.467	1	4	.532

a. Predictors: (Constant), CRAR

b. Dependent Variable : ROCE

### Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	7.469	3.058		2.442	.071	-1.022	15.959
CRAR	.160	.234	.323	.683	.532	-.490	.810

Dependent Variable: ROCE

The correlation between the variables of CRAR and Return on Capital employed is moderate positive correlation with a value of .323 as shown by value of R. The value of R square is .105 which means that only 10.5 percentage of variation in the value of dependent variable is explained by the independent variable. This means that there are other factors that impact on Return on capital employed more significantly than CRAR. At confidence level of 95%, the null hypothesis shows no relationship between variables is rejected. Thus there exists significant relationship between these variables.

## 2.3. Return on Assets (ROA) and CRAR

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.713 <sup>a</sup>	.508	.385	.23176	.508	4.126	1	4	.112

a. Predictors: (Constant), CRAR

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## *Coefficient*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-2.143	1.630		-1.315	.259	-6.667	2.381
CRAR	.253	.125	.713	2.031	.112	-.093	.600

Dependent Variable: Return on Assets

The above results show strong positive correlation with a value of .713 between Return on Assets and CRAR. The value of R square is .508 which means that 50.8 percentage of variation in the value of dependent variable is explained by the independent variable. The null hypothesis of having no relationship between ROA and CRAR is rejected showing significant relationship since the level of significance is above the value of .005 i.e. 95%.

## 2.4. Earnings per Share and CRAR

### *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.257 <sup>a</sup>	.066	-.167	23.75233

a. Predictors: (Constant), Capital Adequacy Ratio

b. Dependent Variable: Earning Per Share

### *Coefficients*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	210.749	167.011		1.262	.276	-252.947	674.445
Capital Adequacy Ratio	-6.799	12.784	-.257	-.532	.623	-42.294	28.696

Dependent Variable: Earnings per Share

The correlation between Earning per Share and CRAR is a negative correlation with a value of .257 as shown by the value of R. The value of R square is .066, which means that 6.6 percentage of variation in the value of dependent variable earning per share is explained by the independent variable CRAR. This means there is very little impact on the dependent variable by independent variable.

## 2.5. Dividends per year and CRAR

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.232 <sup>a</sup>	.054	-.183	6.14293	.054	.227	1	4	.659

a. Predictors: (Constant), Capital Adequacy Ratio

### Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-.034	43.193		.000	.999	-119.957	119.889
Capital Adequacy Ratio	1.575	3.306	.232	.476	.659	-7.605	10.754

Dependent Variable: Dividends Per Share

The correlation between the variables of CRAR and Dividends per Share is a weak positive correlation with a value of .232 as shown in the above table. The value of R-square is .054 which means that 5.4 percentages in the value of dependent variable is explained by the dependent variable Dividends per share.

## 2.6. Dividend Payout Ratio and CRAR

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.827 <sup>a</sup>	.684	.605	2.94774	.684	8.654	1	4	.042

a. Predictors: (Constant), CRAR

### Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-43.116	20.727		-2.080	.106	-100.663	14.430
CRAR	4.667	1.587	.827	2.942	.042	.262	9.072

Dependent Variable: Dividend Payment Ratio

The correlation between the variables CRAR and Dividend Payment Ratio is seemingly strong positive correlation with a value of .827. The value of R square is .684 which means that 68.4 percentage of variation in the value of dependent variable is explained by the independent

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variable. When the test of hypothesis is performed, the level of significance is well above the value of .005. Thus null hypothesis is rejected, which shows significant relationship between the variables discussed above.

### 2.7. Return on Equity (ROE) and CRAR

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.658 <sup>a</sup>	.432	.290	4.65418	.432	3.046	1	4	.156

a. Predictors: (Constant), CRAR

#### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-37.882	32.725		-1.158	.311	-128.742	52.977
	VAR00002	4.372	2.505	.658	1.745	.156	-2.583	11.327

Dependent Variable: Return on Equity (ROE)

The correlation between the variables of CRAR and ROE is strong positive correlation with a value of .658 as shown by value of R. The value of R square change is .432 which means that 43.2 percentage variations in the value of dependent are explained by the independent variable. It means that up to certain extent other factors that impact ROE more significantly than CRAR.

**Multiple Regressions:** The following table shows impact of CRAR on important profitability ratios of Punjab National Bank. The relationship among these variables and their impact on CRAR when considered as an independent variable is explained.

**Table 3** Correlation between determinants of CRAR Correlations

		Capital Adequacy Ratio	Return on Total Shareholder's Fund	Return on Capital Employed	Return on Assets (ROA)	Earnings per Share	Dividends per share	Dividend Payout ratio	Return on equity (ROE)
Pearson Correlation	Capital Adequacy Ratio	1.000	.781	.323	.713	-.257	.232	.827	.658
	Return on Total Shareholder's Fund	.781	1.000	.109	.989	.210	.487	.748	.980
	Return on Capital Employed	.323	.109	1.000	.111	-.175	.305	.596	.052
	Return on Assets (ROA)	.713	.989	.111	1.000	.345	.590	.735	.995
	Earnings per Share	-.257	.210	-.175	.345	1.000	.751	.005	.384
	Dividends per share	.232	.487	.305	.590	.751	1.000	.624	.568
	Dividend Payout ratio	.827	.748	.596	.735	.005	.624	1.000	.669
	Return on equity (ROE)	.658	.980	.052	.995	.384	.568	.669	1.000

**Table 4** Multiple Regression Output table

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
<sup>1</sup> (Constant)	7.071	.000		.	.	7.071	7.071
Return on Capital Employed	-.979	.000	-.484	.	.	-.979	-.979
Earnings per Share	.150	.000	3.965	.	.	.150	.150
Dividends per share	-.737	.000	-5.009	.	.	-.737	-.737
Dividend Payout ratio	.923	.000	5.211	.	.	.923	.923
Return on equity (ROE)	-.223	.000	-1.481	.	.	-.223	-.223

The above table shows the variables which have been accepted by this model as significant ones. This indicates that these variables have the most impact on the CRAR and explain the variation in it. Return on capital employed is the most significant factor wherein the CRAR will change by negative .979 percent with one percent change in ROCE.

#### 4. OVERALL INTERPRETATION

- The calculations of correlation and regression of the profitability ratios of PNB with the CRAR being dependent as well as independent variable shows differing results.
- The Return on Total Shareholder's fund has shown strong positive correlation with CRAR. Thus for a higher ratio of Return on Total Shareholder's fund the CRAR will be high.
- Return on assets (ROA) and Return on equity (ROE) are having strong positive correlation with CRAR. The higher the profits after taxes the ratios of Return on assets and Return on equity will go up. This indicates that higher profit is related with higher capitalisation and lesser provisions from the net profit.
- The Dividend payout ratio has significant positive relationship with CRAR. Thus in orders to high dividend per share and to maintain required CRAR bank need higher capital.
- The return on capital employed (ROCE), Dividends per share (DPS) have weak positive relationship with CRAR. This indicates that there are factors other than capital that have impact on these variables.
- Earnings per share have weak negative relationship with CRAR. This means that there is very little impact of this variable on CRAR. The high profit may get distributed in provisioning and maintaining the capital adequacy norms resulting in low EPS. This means there are other factors which are responsible for variation.

#### 5. FINDINGS AND CONCLUSIONS

##### Findings

On the basis of available data and its analysis, following findings have been identified as described below

- Seven profitability ratios of Punjab National Bank show almost constant with slight variations from year 2009 to 2014, the implementation of Basel II period.
- CRAR is showing declining trends over the years 2009-2014.
- A **positive correlation** exists between **Return on Total Share Holders' Fund (ROTSF)** and CRAR and one percent change in Return on Total Share Holder's fund can change CRAR by 61.1%.



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- A **positive correlation** is found between **Return on Capital Employed (ROCE)** and CRAR but only 10.50 percentage of change in CRAR is defined by this variable.
- **Return on Assets (ROA)** and CRAR have **positive** correlation. We also find that change in one percentage in ROA will change the CRAR by 50.8 percentages.
- The result shows **negative** relationship between CRAR and **Earning Per Share (EPS)**. Further one percentage of change in EPS can affect CRAR by 6.6 percentages.
- **Dividend per share** and CRAR has **weak positive** ratio and only 5.4 percentage change in CRAR is defined by dividend per share.
- There is a significant **positive** relationship exists between **Dividend Payout Ratio and CRAR**. The change in one percentage in Dividend Payout Ratio will change the CRAR by 68.4 percentages.
- We find a **positive** relation between **Return on Equity** and CRAR and one percentage change in ROE will change the CRAR by 43.2 percent.

## 6. CONCLUSIONS

The present study has been carried out to examine the impact of CRAR on the profitability ratios of Punjab National Bank during 2009 to 2014, the implementation period of Basel II. We find that the profitability ratios remain almost constant whereas the CRAR decreases throughout the period under study. The correlation and regression analysis of these variables taking as dependent variables as well as independent variables gives varying relationship with CRAR. Variables Total share Holders' Fund, Return on Capital Employed, Return on Assets, Return on Equity, Dividends per share and Dividend payout ratio have positive correlation with CRAR which means changes in these variables are defined by CRAR. Earnings per share and CRAR show negative relationship. Thus the changes in EPS are not defined by the changes in CRAR and vice versa.

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